



## Vietnamese skilled labor responds to job requirements in period 2011-2016.

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### Abstract

In recent years, Vietnam labor's skill has gradually improved. However, there still existing a gap between labor's skill to the requirements of the work and the demand of labor market. This situation is clearly reflected through the unemployment rate of graduated student at college and university level and the shortages of skilled workers at vocational training. Currently, an imbalance between supply and demand of labor's qualification to meet the requirements of the labor market is one of the most serious concerns of the education and vocational and training system in Vietnam in particular the development of national human resources in general.

This paper uses Vietnam Labor Survey's data (LFS) to analyze and assess the status of Vietnamese qualified/skilled labor to meet job requirements. Accordingly, the results point out the gap between the supply of skilled labor and labor market demand in general as well as the gap in every occupation and sector in the period 2011-2016. As a result, this paper provides the empirical evidence for the ineffective in current education and training system. The paper will propose effective and sustainable recommendations to adjust the policies of national human resource development, national education and training, labor and employment to meet the requirements development and integration of Vietnam in the coming years.

### Introduction

Since Doi Moi, it can be seen that Vietnam has gained achievements in many aspects from economic to social issues. Vietnam is recorded as a country attracting a large amount of foreign direct investment (FDI) over the years.

Vietnam is well-known for a disciplined, hard-working and fast-learning workforce. Up to 2016, the labor force is 54.4 million people (about 60% of the total population), of which males account for 51.57% (about 27.8 million). The number of working people is

97.88% of the total labor force. Unfortunately, unskilled labor accounts for 78.9% of the total workforce and 77.5% of the labor force. The number of skilled workers which respond to the job requirements only occupies 62.1% meanwhile the jobs that do not require the qualification level account for 47.1%.

With 60% of population is labor force, Vietnam is recognized to have labor advantage. However, the quality of labor is a big concern for the Vietnam economy since more than 70 percent of labor force is unskilled labor as mentioned. Currently, a number of enterprises (including FDI enterprises) who claim it is difficult to

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recruit adequate workers especially for technician and manager positions in manufacturing as well as in other economic sectors. A series of World Bank research have point to this issue. Especially, the Ministry of Labor, Invalid and Social (MOLISA) survey shows that there is a high rate of higher educated student unemployment or are working in areas not matching qualifications. This situation reflects the fact that the education and training system in Vietnam requires a comprehensive reform responding to labor market demand as well as to economy development.

This paper analyzes and assesses the status of skilled labor to respond to their job requirements based on international occupation classification 2008 of International Labor Organization (ILO). Data is extracted from Vietnam Labor Force Survey 2011 to 2016. The results show the shortage and surplus rate of skilled labor at all qualification level as well as the rate of supply meets demand for skilled labor for the period 2011-2016. Accordingly, the recommendations to enhance the efficiency of education and training system are suggested.

## Literature

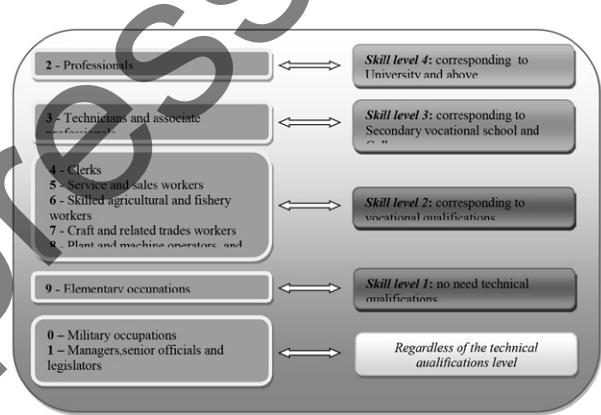
In a report on higher education in Vietnam, World Bank (2008) states that shortage of skilled labor is a very severe bottleneck in manufacturing sector in Vietnam. Deficiencies of skilled labor were becoming more of an obstacle in electronics and significant in sub sectors such as chemical, machinery, furniture and even in textile. About 40 to 50 percent of SOEs and FDI declare that the lack of skilled labor is at least a moderate obstacle. In 2013, World Bank mentions again that Vietnamese firms reported a shortage of workers with the right skills despite impressive literacy and numeracy achievements among Vietnamese workers. The report points out that there is a skills gap in technical, professional and managerial positions while a shortage is common among elementary occupations. Although job-specific technical skills are identified as the most important, employers are also looking for cognitive skills/soft skills and behavioral skills. Human Capital Outlook (2016) mentions that Vietnam's labor market is comprised mostly of low and medium-skilled workers while Singapore and Malaysia both boast skilled, service-based workforces. Accordingly, more than 50 percent of Singapore's workforce is qualified as skilled while in Vietnam that ratio falls to one in ten. The report shows that Vietnam has the highest ratio of low-skilled labor in the region (over 40%)

compared to 9% in Thailand and 8% in Singapore.

Therefore, skilled labor plays an important role in economic development. An empirical study to assess the status of the skilled labor force responding to the job requirements is necessary.

## Methodology

The assessment of the level of the labor force with the surplus in technical qualifications (surplus) or the labor force with technical qualifications lower than the requirements of the job (shortages) is based on the mapping of Vietnam Standard Classification of Occupations as applied in the Census of Population and Housing in 2009 (VSCO-09)<sup>1</sup>. The country's educational categories<sup>2</sup> are grouped into four (4) skills levels as recommended in international standards<sup>3</sup>. The framework is shown in Figure 1 below.



**Figure 1:** Framework for Mapping of VSCO-09 major groups to skill levels

The framework used for the design and construction of VSCO-09 is based on two main concepts: the concept of the kind of work performed or *job*<sup>4</sup> and the

<sup>1</sup> Vietnam Standard Classification of Occupations applies in the census of population and housing in 2009 was developed based on International Standard Classification of Occupations 2008 (ISCO-08).

<sup>2</sup> Vietnam classification of Educational Attainment, of Vietnam Education Code 2005

<sup>3</sup> ILO (2012); International Standard Classification of Occupations, ISCO-08: Volume 1- Structure, group definitions and correspondence tables; Geneva (Switzerland), pp. 12-13. A

<sup>4</sup> Job is defined in VSCO-09 as a 'set of tasks and duties carried out, or meant to be carried out, by one person for a particular employer, including self-employment.'

concept of *skill*<sup>5</sup>. VSCO-09 can be divided into 4 levels of specific skills: (a) *Skill level 1*: no need of specific technical qualifications; (b) *Skill level 2*: corresponding with vocational qualifications<sup>6</sup>; (c) *Skill level 3*: corresponding to Secondary vocational school and College; (d) *Skill level 4*: corresponding to University and above. We should also note that for jobs in groups 0 – “Military occupations” and 1 – “Managers, senior officials and legislators” as well as for persons employed in “Labor in agricultural households”. These occupations will be considered as hosting any of the technical qualifications in the above framework.

In this paper, the following framework is used to calculate the rate of skilled labor supply to its demand (see Table 1 below)

**Table 1:** Conceptual framework for balancing the supply and demand for skilled labor

Occupations	Technical qualifications/Skills level				Technical	Demand
	Non-technical qualifications	Vocational training	Secondary vocational school and College	University and above	Technical qualifications/skill shortage (M)	Demand for technical qualifications (D)
Unemployment	U1	U2	U3	U4		U [From U1 to U4]
Major groups “0”, “1” and labor in agricultural ( <i>Regardless of the technical qualifications</i> )	(01)	(02)	(03)	(04)	M0=0	D0 [From (01) to (04)]
Major group 9: Elementary ( <i>No need the technical qualifications</i> )	(11)	(12)	(13)	(14)	M1=0	D1 [From (11) to (14)]
Major groups from 4 to 8: Clerks and workers ( <i>Request have to vocational training</i> )	(21)	(22)	(23)	(24)	M2 [(21)]	D2 [From (21) to (24)]
Major group 3: Technicians and associate professionals ( <i>Request have to secondary vocational school or college</i> )	(31)	(32)	(33)	(34)	M3 [(31) and (32)]	D3 [From (31) to (34)]
Major group 2: Professionals ( <i>Request have to university and above</i> )	(41)	(42)	(43)	(44)	M4 [(41),(42) and (43)]	D4 [From (41) to (44)]
Technical qualifications surplus (R)	R1=0	R2 [(12)]	R3 [(13) and (23)]	R4 [(14), (24) and (34)]		
Supply for technical qualifications/skilled labor (S)	S1 [U1 and (01) to (41)]	S2 [U2 and (02) to (42)]	S3 [U3 and (03) to (43)]	S4 [U4 and (04) to (44)]		
Balancing supply and demand technical qualifications/skilled labor (B)	B1 [S1-D1]	B2 [S2-D2]	B3 [S3-D3]	B4 [S4-D4]		

Source: Authors

<sup>5</sup> Skill is defined as the ability to carry out the tasks and duties of a given job. For the purposes of VSCO-09, two dimensions of skill are used to arrange occupations into groups. These are skill level and skill specialization.

As mentioned in Table 1, some key concepts will be defined in this paper as below:

*Skills shortage rates (SSR):* skills shortages can be assessed per major occupational group (SSRj) and per the total labor market. This is defined as the proportion of persons with technical qualification shortages in the total employment in a given occupational group requiring technical qualifications.

*Demand and supply of skilled labor:* The demand for technical qualifications or skilled labor is defined as the current employed person in each major occupational group; the skills level required corresponds to skills level (technical qualification) associated to that occupational group as in Figure 1 above. The supply of technical qualifications (or skills) to the labor market is defined as the total number of persons in the labor force trained in each technical qualifications.

<sup>6</sup> The knowledge and skills required for competent performance in all occupations at Skill Level 2 are generally obtained through vocational training. In some cases experience and on the job training may substitute for the formal education. Therefore, when analyzing skill level 2 it is necessary to consider data combined with the experience (number of years) doing the job.

**Skills underutilization rate (SUR):** skills underutilization can be assessed per each of the technical qualifications category (SURi), by dividing the technical qualifications surplus by the total supply in the technical qualifications group. The overall skills underutilization rate can be assessed as the total number of persons in technical qualifications surplus and unemployment divided by the total skills supply.

**Skills adequacy (inadequacy) rate (SAR)** defined as the number of persons in skills related adequate employment, divided by total employment. In this case persons employed in major groups 0, 1, and labor in agriculture will be considered as in adequate use of their skills.

**Supply meets demand ratio (SMDR)** is balancing supply and demand of technical qualifications in the labor market; expressed by a ratio or the difference between the total supply and total demand of technical qualifications.

## Data

This study uses Vietnam Labor Force Survey (LFS) from GSO during the period 2011-2016. The LFS was conducted by GSO from 2007, in which, from 2007-2013 it is an annual survey, from 2014 was conducted quarterly and from 2015 was conducted monthly.

The purpose of LFS is to collect information of labor, employment by households to calculate indicators of human resource and employment from formal and informal for administration, exploration and usage of labor force effective and reasonable development.

The scope of the survey in 2016 is 225,088 households based on random selection from 3,760 areas over the country.

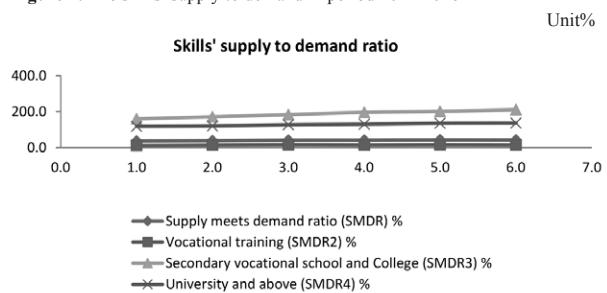
## Results

### The supply to demand ratio of skills (SMDR) is very low

In general, the SMDR has slowly improved over the period 2011-2016, increasing from 36.1% in 2011 to 42.3% in 2016, with the lowest rate at vocational training level and the highest rate at the secondary school and college (as shown in Figure 2).

During 2011-2016, the total supply of skilled labor of the economy slowly decreased, from 65.6% in 2011 to 61.7% in 2016, males seems to be more adapted than females with males increasing from 65.4% in 2011 to 62.8% in 2016 in comparison with female's rate of 65.9% and 60.7%.

**Figure 2: The skills' supply to demand in period 2011-2016**



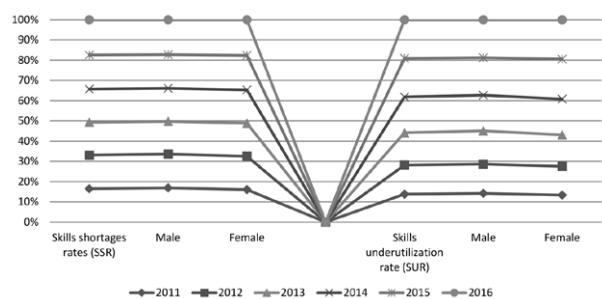
Source: Calculation based on LFS 2011-2016, GSO by authors.

### Inefficiency in education and training structure and human resources usage.

The shortage skill rate in general mainly falls into the group of vocational level and surplus of secondary and college level and increasing over years.

The data shows that the shortage skill rate in the whole economy has increased from 32.2% in 2011 to 34.0% in 2016, meaning that an increase of 1.8 percentage point over 5 years, of which, a decrease at three level skills are recorded. Unfortunately, an increase of skills underutilization rate appears at the same period. The rate of labor working at lower skills increases from 16.6% in 2011 to 23.0% in 2016, of which, the skills at secondary and college significantly increases from 29.0% in 2011 to 40.8% in 2016 while its rate at vocational training slightly decreases from 5.0% to 4.9% in 2016 in general. The skills underutilization rate in female increases faster than in male over the years.

**Figure 3: The rate of skills underutilization and skills shortage by gender in 2011-2016.**



Source: Calculation based on LFS 2011-2016, GSO by authors.

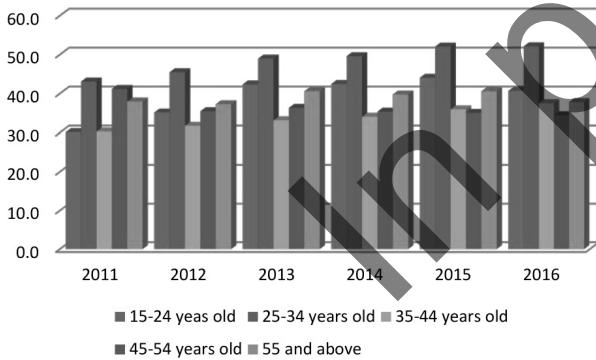
During 2011-2016, the labor market in Vietnam has seen the situation of overeducated labor gradually increase from 2.2% in 2011 to 4.1% in 2016. The skills

of vocational training level has remained around the rate of 0.1 to 0.2% over the years while the rate of university and above level has significantly increased from 0.7% in 2011 to 1.7% in 2016, meaning an increase of 1.0 percentage point over the past 5 years. The figures reflect the situation of imbalance in the education system in Vietnam has increased. Vietnams' labor market has experienced rising unemployment rates of higher education graduated students in recent years which is recorded by MOLISA.

*The ratio of supply and demand skilled labor balance is low at all age group, especially at young age.*

Figure 4 shows that the skill adequacy rate of all age groups increases over years but is at a low rate. According to Figure 4, the highest rate is seen in 25-34 years old, which increases from 43.1% to 52.1% in 2011-2016 and the lowest rate is for 45-54 years old, which decreases from 41.2% to 34.4% in the same period. This fact reflects that the education and training system 10 years ago worked more effectively since the skill adequacy rate reaches the highest among 05 age groups.

**Figure 4:** Proportion balance of supply and demand of skilled labor by age groups



Source: Calculation based on LFS 2011-2016, GSO by authors.

The skill underutilization rate of workforce (SUR) for ages 15-24 reaches the highest rate among 05 age groups ( an increase from 27.0% in 2011 to 37.2% in 2016) while the lowest rate is for ages 35-44 (only increases from 10.8% to 14.7%, respectively). Along with this, skill underutilization at 03 qualification level for ages 15-24 also account for the highest rate, of which, skills of secondary and college level occupies for the largest proportion, increasing from 39.5% in 2011 to 48.5% in 2016, skills of university and above level ranks

at second, increasing from 26.6% to 41.4%, respectively. It can be said that the output of current education and training system is the most ineffective since the 15-24 years old is the age of newly graduates, the 25-34 years old just graduated 2-13 years ago while the group age of 35-44 graduated 20 years ago. Clearly, the output of education system 20 years ago seems to meet job requirements better than today.

**Table 2:** Skill underutilization rate by age group

	Unit: %						
	Year	2011	2012	2013	2014	2015	2016
<b>Group age of 15-24</b>							
<b>Skills underutilization rate (SUR)</b>	27.0	28.2	32.1	37.3	38.7	37.2	
<i>Vocational training (SUR<sub>v</sub>)</i>	10.4	11.4	12.1	13.5	11.1	9.3	
<i>Secondary vocational school and College (SUR<sub>s</sub>)</i>	39.5	38.5	42.8	46.4	49.4	48.5	
<i>University and above (SUR<sub>u</sub>)</i>	26.6	30.2	38.5	44.2	44.3	41.4	
<b>Group age of 25-34</b>							
<b>Skills underutilization rate (SUR)</b>	16.1	16.7	18.4	20.9	23.7	25.4	
<i>Vocational training (SUR<sub>v</sub>)</i>	4.1	4.4	4.8	4.6	6.0	4.7	
<i>Secondary vocational school and College (SUR<sub>s</sub>)</i>	28.5	30.7	33.6	37.1	40.4	43.0	
<i>University and above (SUR<sub>u</sub>)</i>	12.9	14.1	16.5	19.1	22.7	24.1	
<b>Group age of 35-44</b>							
<b>Skills underutilization rate (SUR)</b>	10.8	10.8	12.6	13.2	14.5	14.7	
<i>Vocational training (SUR<sub>v</sub>)</i>	2.3	2.2	3.5	2.8	3.6	3.5	
<i>Secondary vocational school and College (SUR<sub>s</sub>)</i>	22.2	24.9	29.0	29.8	34.0	35.0	
<i>University and above (SUR<sub>u</sub>)</i>	9.1	8.7	11.5	12.6	14.1	13.8	
<b>Group age of 45-54</b>							
<b>Skills underutilization rate (SUR)</b>	14.6	14.8	15.0	15.3	15.8	15.4	
<i>Vocational training (SUR<sub>v</sub>)</i>	4.5	3.4	4.5	5.1	5.1	4.4	
<i>Secondary vocational school and College (SUR<sub>s</sub>)</i>	25.1	28.6	29.1	29.3	32.5	33.1	
<i>University and above (SUR<sub>u</sub>)</i>	10.8	10.0	10.6	10.8	12.0	11.7	
<b>Group age of 55 and above</b>							
<b>Skills underutilization rate (SUR)</b>	19.9	20.6	21.3	20.4	20.9	20.0	
<i>Vocational training (SUR<sub>v</sub>)</i>	3.9	4.3	6.4	5.3	3.4	4.0	
<i>Secondary vocational school and College (SUR<sub>s</sub>)</i>	29.0	31.3	30.6	30.8	32.6	31.5	
<i>University and above (SUR<sub>u</sub>)</i>	21.6	22.0	23.7	22.2	23.9	20.5	

Source: Calculation based on LFS 2011-2016, GSO by authors.

#### **A large gap of skilled labor by economic sectors and economic industries exists.**

The supply of skilled labor in foreign invested economic sector and non-stated economic sector does not meet the skilled labor demand.

As demonstration in table 3, during 2011-2016, a large imbalance of supply and demand of skilled labor

exists. Though the demand of skilled labor in the foreign invested economic sector is always high<sup>7</sup>, the capacity of skilled labor supply only respond to around 22% of its demand. In non-stated sector, supply of skilled labor only respond to 21.2 to 30.2% of its demand. Only in stated economic sector, the supply of skilled workers respond to 90.3 to 98.1% of its demand in the same period. In Vietnam, the non-stated economic sector and the foreign invested economic sector are playing a more important role in the economy, however, supply of skilled labor in two sectors have not developed adequate to its requirements. It could be the explanation for the fact that FDI enterprises complaint of problems recruiting skilled workers recently.

**Table 3:** Proportion of supply meets demand of skilled labor by economic sector in 2011-2016

	2011	2012	2013	2014	2015	2016
<b>Stated own sector</b>						
<b>Supply meets demand ratio (SMDR)</b>	90.3	92.5	95.4	95.5	96.9	98.1
<i>Vocational training (SMDR)</i>	31.7	34.6	34.7	31.8	34.8	34.9
<i>Secondary vocational school and College (SMDR)</i>	135.0	138.1	141.8	144.2	138.6	137.8
<i>University and above (SMDR)</i>	104.8	107.3	110.3	112.0	114.0	115.6
<b>Non-stated sector</b>						
<b>Supply meets demand ratio (SMDR)</b>	21.2	23.2	26.3	26.6	30.3	30.2
<i>Vocational training (SMDR)</i>	9.6	11.2	13.2	12.1	13.4	12.5
<i>Secondary vocational school and College (SMDR)</i>	203.6	224.8	241.4	269.8	266.9	290.4
<i>University and above (SMDR)</i>	154.5	148.1	161.4	165.9	164.9	164.4
<b>Foreign invested sector</b>						
<b>Supply meets demand ratio (SMDR)</b>	22.0	22.8	24.1	23.0	22.6	22.4
<i>Vocational training (SMDR)</i>	9.4	10.0	10.0	8.4	7.4	7.2
<i>Secondary vocational school and College (SMDR)</i>	123.0	142.2	179.4	166.5	207.9	309.1
<i>University and above (SMDR)</i>	111.3	111.6	111.1	123.0	130.5	140.0

Source: Calculation based on LFS 2011-2016, GSO by authors.

*The balance of supply and demand of skilled labor by economic sector is different.*

The increase and decrease trend is uneven in the period 2011-2016. There are industries where the level of supply and demand has improved meanwhile other industries has gradually decreased over the period. In general, however, skilled labor supply does not respond to each industries' demand.

In 18 primary industries (level I)<sup>8</sup>, the "accommodation and catering services" industry receives the highest shortage skilled labor rate, at 87-79% in the period 2011-2016; next is the "wholesale, retail and

repair" at 78-70%; the industry of "processing and manufacturing" ranks the third with a rate of 77-73%; and then the "real estate" industry with a rate of 60-48%. This implies that the available capacity of skilled labor responding to job requirement in those industries are very poor. In the context that the economy needs a structural changes, the "key and pioneer" industries such as "accommodation and catering services" and "processing and manufacturing" only respond to 8.6-15.5% and 15.1-20.9%, respectively in this period. The ratio in some industries such as "real estate" industry decreases from 49% to 43%.

The rate in some industries, for example, "processing and manufacturing" industry stays at the same rate (around 19-20%). The reason is that these industries have not attracted students in the education and training system. It is believed that this rate may decrease in the upcoming years if there is no change in the current education and training system.

However, some industries receive a high rate of supply meets demand of skilled labor such as "education and training" industry (around 97-98%); "Production and distribution of water and electricity" industry (around 82-85%) and rates in some industries even increase, for instance, "research activities" industry increases from 77% to 84%, which shows the efficiency from investing in scientific research activities and calling for high quality human resources policy in Vietnam.

## Conclusion and Discussion

In summary, it is easy to see the inefficiency of current Vietnam education and training system and its operation. Vietnam labor market currently has both overeducated and undereducated of worker qualification status. It is reflected through the surplus rate of skilled labor at college and university and above level as well as the shortage rate of the skilled labor at the vocational level. This situation implies the wastage in terms of fi-

<sup>7</sup> In the period 2011-2016, though the world economy is in crisis, Vietnam economic remains the destination for foreign investors thanks to successful build up of the investor's trust; stable political situation, and stable growth rate. Especially, in the period 2013-2014, many big corporations decided to invest in Vietnam or transfer investment location from other countries in the ASEAN region to Vietnam such as Microsoft and Samsung with a large registered capital (according to the Ministry of Planning and Investment).

<sup>8</sup> Primary industry classification based on the Vietnam Standard Classification of Occupations 2007

nance and human resource of the whole society, enterprises and individuals.

There are many reasons that can explain this imbalance in training and usage of labor. Among these, Vietnamese labor market has not fully developed is considered as one of the most important reasons. Currently, Vietnam lacks a national labor market information system covering all information from employers, employees to education and training institutions. It leads to a lack of information of each learner, their employment status, their job placement and income after graduation to assess the quality and productivity of education and training system. The information of labor demand of skills, knowledge, or the attitude of enterprises and employers is also not sufficient. Moreover, lack of information between supply and demand skills causes the fragmented linkage among education and training institutions, learners (and parent's learners) and enterprises and employers. The lack of information among the parties also makes the decision of each learner to enter the labor market as well as to participate in each education level becomes ineffective.

## Recommendation

In order to improve the quality of human resources to meet the labor market requirements in the coming years, the following recommendations are offered:

*Establish a clear, updated, public and transparent national information system of employment.*

The national information system of employment should be developed to update on the supply of labor as well as on the demand side by three parties including learners, educational institutions and employers. The important purpose of this system is to provide specific forecasts on human resource by occupation, by industry, and by skill level and to show the shortage as well as surplus in order to fill the gap of supply and demand labor. Accordingly, the students and their family can have proper choices to the actual requirements of the labor market; educational institutions can moderate their educational and training framework and curriculum to meet the needs of the qualifications and skills of the labor market. At the same time, enterprises and employers can promote the matching between demand side (employers) and the supply side (workers). Last but not least, this system will become an effective channel for the State to develop sufficient education policies.

## *Develop a healthy education and training market especially a vocational training system.*

Complete the model for a school in enterprise in order to enhance the efficiency of education and training system and labor usage for the right skill level. Concurrently, it also helps to improve labor's qualification by actual work. The model of school in enterprise may encourage enterprises to participate in human resource development and influence the linkage between supply and demand of labor responding to social needs.

The State encourages students to study on basic and general studies which currently does not meet up to 50% of the skilled labor demand, for instance of "processing and manufacturing", "mining", "construction". In the short term, this shortage has caused difficulties in implementing the economic restructuring that Vietnam is aiming at. Therefore, it is necessary to have an appropriated education policy that can encourage and oriente the learner to study the majors in order to develop human resource in the long term responding to national development direction. At the same time it is important to complete the vocational training system which can encourage and promote learners, enterprises and society involvement.

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